



**STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION**

TRAFFIC OPERATIONS DIVISION
SUITE 1800, JAMES K. POLK BUILDING
505 DEADERICK STREET
NASHVILLE, TENNESSEE 37243-1402
(615) 253-1122

CLAY BRIGHT
COMMISSIONER

BILL LEE
GOVERNOR

TO: Will Reid
Assistant Chief Engineer of Operations

FROM: *MA* Brad Freeze, Director of Traffic Operations


SUBJECT: **Proprietary Item Request and Justification for Street Lighting
City of Franklin**

The City of Franklin is requesting that Holophane high mast lighting fixtures be installed in all roadway lighting projects within the City of Franklin over the next three years where Federal and/or State funding are used. This request includes the Holophane High Mast Advanced Optix (HMAO) LED III series lighting fixtures with Color Temperature of 3,000K and Field Adjustable Output (AO). The following are justification items for this request:

The City of Franklin currently maintains all interstate lighting along I-65 that is within the City's jurisdiction which consists of 25 high mast lighting poles containing 162 individual LED lighting fixtures. All of these fixtures are Holophane high mast lighting fixtures

The City of Franklin staff has been extensively trained to install, operate, maintain, and troubleshoot Holophane high mast lighting fixtures. This knowledge allows the technicians to quickly diagnose problems with field units which reduces the time required to maintain the system overall and helps keep the system operational to functionality of the synchronized system. By utilizing these devices as the standard for the City, there will be a cost savings in stocking replacement equipment which will result in faster and less costly repair.

I, Brad Freeze, Director of the Traffic Operations Division of the Tennessee Department of Transportation, do hereby certify that in accordance with the requirements of 23 CFR 635.411(a) (2) that the patented or proprietary items listed above are essential for the synchronization of existing facilities.


Assistant Chief Engineer of Operations

8/5/19
Date



HISTORIC
FRANKLIN
TENNESSEE

27 June 2019

Mr. Steve Bryan, P.E., PTOE
Section Manger
Tennessee Department of Transportation
Signal and Lighting Design Section
James K. Polk Building, 12TH Floor
505 Deaderick Street
Nashville, TN 37243

**RE: Proprietary Item Request and Justification for High Mast Lighting for the
I-65 and SR-248 (Goose Creek Bypass) Interchange Lighting Project (PIN 125454.00)**

Dear Mr. Bryan,

As was discussed in last week's Construction Field Review Meeting for the I-65 and SR-248 Interchange Lighting Project (PIN 125454.00), the City of Franklin respectfully requests the specification of a particular brand and model to be used for the high mast lighting associated with this project. The specific item number listed in the "Estimated Roadway Quantities" table of the latest construction plans is 714-09.10 "Luminaries (376 Watt – High Mast). The City of Franklin requests the use of Holophane® High Mast Advanced Optix (HMAO™) LED III series high mast lighting.

The City of Franklin currently maintains all interstate lighting along I-65 that is within the Franklin City Limits. The City maintains twenty-five (25) high mast lighting poles, which includes one hundred sixty-two (162) individual LED fixtures. All of these fixtures are Holophane® branded high mast fixtures, with the most recent installation in 2016. At the time of this most recent installation, Holophane® was producing and selling their generation/series II HMAO™ product. However, this series has been replaced with current HMAO™ LED III series product.

The Holophane® products have provided excellent results, and our in-house technicians have become familiar with the operation of these particular units. Therefore, the City of Franklin respectfully requests the use of the currently available Holophane® HMAO LED III series high mast fixture with the proposed I-65 and SR-248 Interchange Lighting Project (PIN 125454.00).

The City of Franklin (COF) also requests that these high mast fixtures be specified with the following options:

- Color Temperature of 3,000K
- Field Adjustable Output (AO)



For your reference, I have attached both a copy of the product brochure and specification sheets from the manufacturer. On the specification sheet, I have also indicated the City's request for specific options. Please do not hesitate to contact me with any questions or concerns you may have

Respectfully,

Jonathan J. Marston, P.E.
Assistant Director of Engineering
City of Franklin

Attachments (2)

Cc: Joe York, COF Street Director
Steve Grubb, COF Assistant Street Director
Carl Scott, COF Traffic Maintenance Supervisor
Michael Hamm, COF Traffic Maintenance Supervisor
Stanley Trice, TDOT Transportation Project Specialist – Supervisor 2
Amin Salman, TDOT Transportation Project Specialist - Senior
Matthew Goette, HDR TN Traffic Section Manager



HMAO™ LED III

High Mast Roadway and Area Lighting

Typical Applications

Port Container Facilities

Highways and Interchanges

Rail Yards

Correctional Facilities

Large Area Industrial

Military Installations

Airports

Truck Stops

Toll Plazas



The **HMAO LED III** is a highly-engineered product specifically designed for high mast lighting applications. It provides long system life, excellent uniformity and substantially reduced maintenance costs with energy reduction of up to 65% over high intensity installations. The luminaire offers design flexibility with an advanced optical system to meet a variety of roadway and area applications.

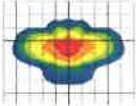
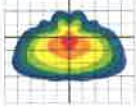
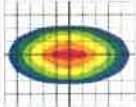
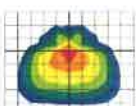
Key Features & Benefits

- + Lumen packages ranging from 31,000 to 86,000 provide one-for-one replacement of up to 1000 watt HPS
- + Prismatic glass optics provide high application efficacy, uniformity, and glare control
- + A choice of multiple asymmetric lighting distributions for both median mount and offset pole mounting configurations
- + Symmetrical narrow and wide distributions to maximize system efficacy and quality of light for multiple pole spacings
- + Long system life with driver life exceeding 100,000 hours and LED life of L82 @100,000 hours minimize maintenance costs
- + Robust mechanical design with IP66 optics, 3G vibration rating, 4-bolt mounting, and a polyester paint finish with 5,000-hour salt fog rating ensures system reliability
- + Robust extreme surge protection rating of 20kV/10kA
- + Control options include 0-10V dimming, P7 photocontrol, ROAM™ enabled
- + Field-adjustable output allows for zone control, accelerating your return on investment

Roadway Lighting

The luminaire has multiple roadway lighting distributions designed to maximize spacing while meeting stringent requirements of IES RP8 guidelines for average, uniformity and veiling luminance. Installation costs are minimized with this direct retrofit luminaire without rewiring or changing existing luminaire arms. Asymmetric distributions are easily aimed towards the roadway with the rotatable optical assembly.

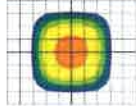
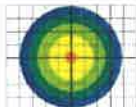
Energy Savings	
Energy Savings	60%
Maintenance Savings	60%
Service Life	>20 Years
Payback	3-4 Years

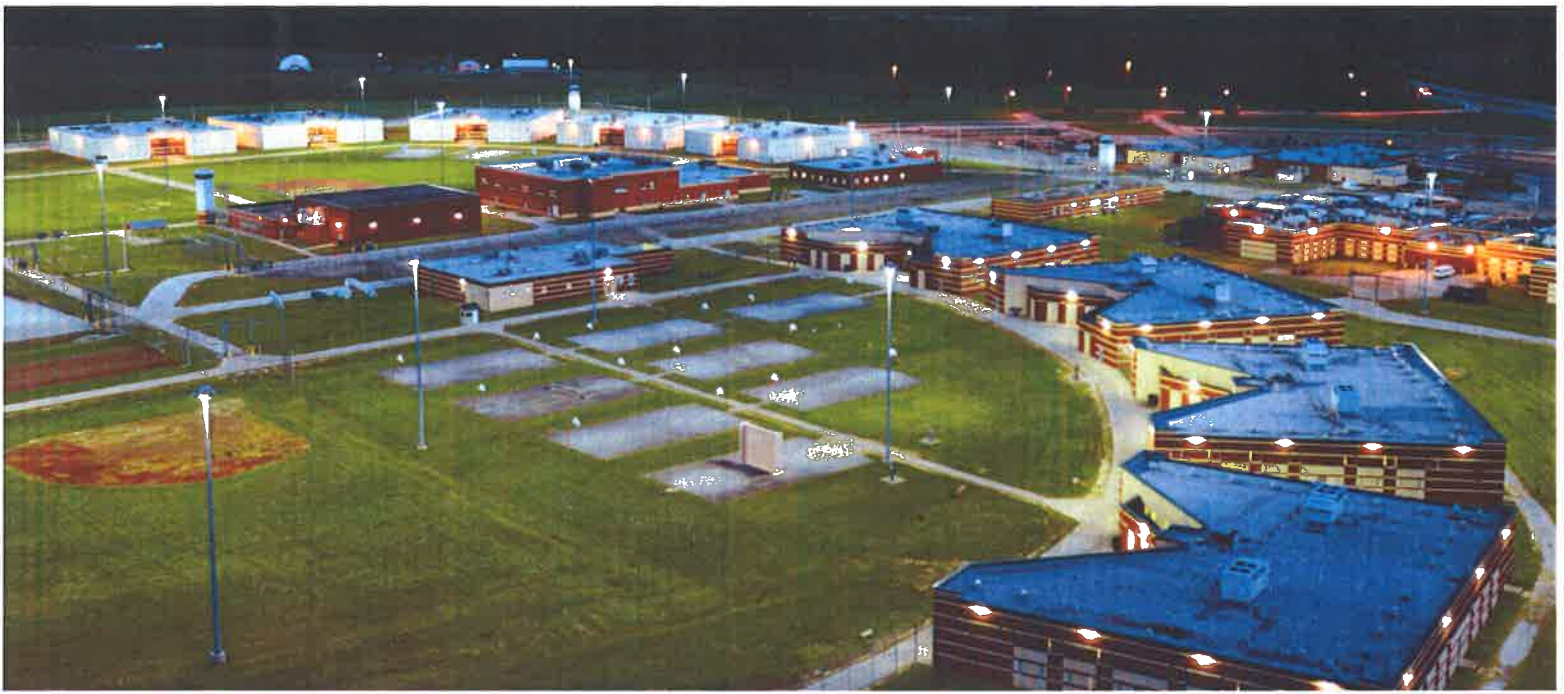
Design Flexibility		
	N	Narrow Asymmetric
	M	Medium Asymmetric
	LN	Long and Narrow for Median Mount
	F	Forward Throw

Area Lighting

The luminaire has an area narrow and area wide distribution to maximize pole spacing while meeting the required foot-candle level and uniformity for the application. Performance packages range up to 86,000 lumens designed to meet critical levels for "high task" areas in Ports, Rail Yards, Industrial, and Correctional facilities. The fully prismatic glass optics produce an overlapping light pattern resulting in high application efficacy providing excellent uniformity and glare control resulting in excellent visibility within the space.

Energy Savings	
Energy Savings	65%
Maintenance Savings	60%
Service Life	>20 Years
Payback	3-4 Years

Design Flexibility		
	AN	Area Narrow
	AW	Area Wide



HMAO LED III

Optical and Mechanical Attributes

- + **Prismatic Borosilicate Glass Optics**
for optimal performance and durability
- + **Rotating Optical Assembly**
provides application design flexibility
- + **Robust Cast Aluminum Housing**
with 5,000 hour salt fog rated finish
- + **Removable Power Door**
to simplify installation & maintenance
- + **Stainless Steel Captive Screws**
allow easy access into electrical compartment



High performance modular LED light engine



FAO (Field-Adjustable Output) Module



Reliable 20kV/10kA extreme surge protection



3-stage terminal block for ease of wiring and installation



3 or 7-pin receptacle with a variety of controls options



4-bolt mounting provides 5-degree tilt and 3G rating



Acuity Brands Lighting, Inc.

Holophane Headquarters, 3825 Columbus Road, Granville, OH 43023

Acuity Brands Lighting Canada, Inc., 35B Minthorn Blvd., Markham, ON, L3T 7N5

Holophane Europe Limited, Bond Ave., Milton Keynes MK1 1JG, England

Holophane, S.A. de C.V., Km. 31 Carretera Mexico-Cuautitlan 54900 Tultitlan Edo. De Mexico

Contact your local Holophane factory sales representative for application assistance, and computer-aided design and cost studies. For information on other Holophane products and systems, call the Inside Sales Service Department at 866-759-1577. In Canada call 905-886-8967 or fax 905-886-7973.

Warranty Five-year limited warranty. Full warranty terms located at www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx

Visit our web site at www.holophane.com



HMAO LED III	Distribution	Lumens	Input Watts	LPW
		4000K		
PK1	LN	32,718	209	157
	N	30,114	209	144
	M	30,095	209	144
	F	27,138	209	130
	AN	32,836	209	157
	AW	31,700	209	152
PK2	LN	46,349	319	145
	N	42,662	319	134
	M	42,635	319	134
	F	38,445	319	121
	AN	46,517	319	146
	AW	44,908	319	141
PK3	LN	66,820	475	141
	N	61,503	475	129
	M	61,464	475	129
	F	55,424	475	117
	AN	67,061	475	141
	AW	64,741	475	136
PK4	LN	85,840	627	137
	N	79,010	627	126
	M	78,960	627	126
	F	71,200	627	114
	AN	86,150	627	137
	AW	83,170	627	133
30K lumens = .95 40K				

AO Module		
AO setting	Lumens %	Wattage %
8	100%	100%
7	100%	100%
6	100%	100%
5	88%	85%
4	80%	75%
3	67%	61%
2	57%	49%
1	41%	34%

LAT				
0C	15C	25C	35C	40C
1.05	1.02	1.00	0.98	0.97

LLD				
L70	PK1	PK2	PK3	PK4
25,000 hours	0.96	0.95	0.94	0.95
50,000 hours	0.92	0.90	0.90	0.91
75,000 hours	0.88	0.85	0.86	0.87
100,000 hours	0.84	0.81	0.82	0.82

HMAO LED III
LED High Mast Lighting

Infrastructure
Specialty

HOLOPHANE
LEADER IN LIGHTING SOLUTIONS
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ORDER #:
TYPE:
DRAWN: JSE
DATE: 5/29/19
DWG #: LUM_HMAO LED III